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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,393	10/29/2003	Kyung-Geun Lee	1293.1962	6809

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STEIN, MCEWEN & BUI, LLP
1400 EYE STREET, NW
SUITE 300
WASHINGTON, DC 20005

EXAMINER	
BIBBINS, LATANYA	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,393	LEE ET AL.	
	Examiner	Art Unit	
	LaTanya Bibbins	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) *17-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,9,11-15 and 22-28* is/are rejected.

7)☒ Claim(s) *6-8,10,16 and 29* is/are objected to.

8)☒ Claim(s) *1-29* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Election/Restrictions

1. Applicant's election with traverse of subcombination I, claims 1-16 and 22-29, in the reply filed on October 4, 2006 is acknowledged. Claims 17-21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected subcombinations, there being no allowable generic or linking claim. Applicant traverses the election requirement by arguing "all three inventions share the common feature of using disc-related information stored in the BCA," "there have been no references cited to show any necessity for requiring restriction," and "subclassification is not conclusive on the question of restriction. However, the traversal is not found persuasive because of the following: inventions having common features is not demonstrative of lack of patentable distinction, the examiner need not cite documents to support the restriction requirement (MPEP §803), and although the three inventions are classisfied in class 369, the three inventions are classified in three different subclasses (275.1, 52.1, **and** 44.1). Therefore, the election requirement is maintained.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 9 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites the limitation "each recording layer." There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitations "the tracking polarity information" and "the information that are repeatedly recorded." There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Selinfreund et al. (US PGPub 2003/0219124 A1).

Regarding claim 1, Selinfreund clearly discloses an optical disc, comprising: a clamping area; a lead-in area; a data area; and a burst cutting area (BCA) between the clamping area and the lead-in area and in which information regarding the optical disc is

recorded, wherein the information is read before performing tracking in the data area (see paragraph [0064] and Figure 1B).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Selinfreund et al. (US PGPub 2003/0219124 A1) and further in view of Uhde et al. (US PGPub 2002/0003757 A1).

Regarding claim 2, Selinfreund does not teach that the information regarding the optical disc is at least one of tracking polarity information and reflectivity information. Uhde, however, teaches that the information regarding the optical disc is at least one of tracking polarity information and reflectivity information (see paragraph [0022] where the BCA information is described as "tracking regulation" including "track gain" and "track offset").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the tracking information contained in the BCA area as described by Uhde into the BCA area of the optical disc described by Selinfreund. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to "shorten the waiting or

adjustment time after the insertion of the optical recording medium into the apparatus" (Uhde paragraph [0007]).

Regarding claim 4, Selinfreund and Uhde teach an optical disc that records tracking polarity information in the BCA however fail to teach that of the tracking polarity information begins at leading bytes in the BCA. Examiner takes official notice that it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to locate the tracking polarity information in any location of the BCA including in the leading. One of ordinary skill in the art at the time the invention was made would have been motivated to do so because locating the tracking polarity information in any location in the BCA of the optical disc would produce identical performance in terms of storing and reading back data.

9. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Selinfreund et al. (US PGPub 2003/0219124 A1) and Uhde et al. (US PGPub 2002/0003757 A1) as applied to claim 2 above, and further in view of Nishiuchi et al. (US Patent 6,894,962 B1).

Regarding claim 3, Selinfreund and Uhde disclose an optical disc wherein tracking polarity and reflectivity information are recorded (Uhde paragraph [0022]) but fail to teach that the tracking polarity information and the reflectivity information are recorded with a pattern of crystalline or non-crystalline marks. Nishiuchi on the other hand discloses an optical disc wherein the tracking polarity information and the

reflectivity information are recorded with a pattern of crystalline or non-crystalline marks (column 11 lines 48-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc of Selinfreund and Uhde to include a BCA recorded with crystalline marks as disclosed by Nishiuchi. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to allow information to be recorded "without damaging the information layer" (Nishiuchi column 11 lines 54 and 55).

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Selinfreund et al. (US PGPub 2003/0219124 A1) and Uhde et al. (US PGPub 2002/0003757 A1) as applied to claim 4 above, and further in view of Kobayashi et al. (US Patent Number 6,819,643 B2).

Regarding claim 5, Selinfreund and Uhde disclose an optical disc wherein the tracking polarity information is in a BCA but fail to teach that the tracking polarity information is repeatedly recorded. Kobayshi, however, discloses an optical disc (Figure 3) wherein the information is repeatedly recorded (column 4 lines 10-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enhance the optical disc that contains the tracking polarity information of Selinfreund and Uhde by repeatedly recording the information as taught by Kobayshi. One of ordinary skill in the art at the time the invention was made

would have been motivated to combine the teachings in order to maintain reliable tracking polarity information.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Selinfreund et al. (US PGPub 2003/0219124 A1) as applied to claim 1 above, and further in view of Otomo et al. (US PGPub 2001/0008578 A1).

Regarding claim 9, Selinfreund does not teach the optical disc as recited wherein the clamping area, the lead-in area, and the data area are formed in each recording layer of the optical disc. Otomo, however, teaches an optical disc wherein the clamping area, the lead-in area, and the data area are formed in each recording layer of the optical disc (see paragraph [0081] and Figure 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc of Selinfreund to include the claimping, lead-in and data areas on each recording layer as taught by Otomo. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to quickly access the information contained in the lead-in area while recording on a particular layer.

12. Claims 11, 12, 22, 25, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otomo et al. (US PGPub 2001/0008578 A1) and further in view of Uhde et al. (US PGPub 2002/0003757 A1).

Regarding claim 11, Otomo discloses an optical disc, comprising: a first recording layer in which a first lead-in area, a first data area, and a first lead-out area are formed; and a second recording layer in which a second lead-in area, a second data area, and a second lead-out area are formed (see paragraph [0081] and Figure 1). Otomo fails to that at least one of the first and second recording layers comprise a burst cutting area (BCA). Uhde, on the other hand teaches at least one of the first and second recording layers comprise a burst cutting area (BCA) in which information regarding the optical disc is recorded, and the information is read before performing tracking in the first and second data areas (see paragraph [0009]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc taught by Otomo to include the BCA taught by Uhde. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to "shorten the waiting or adjustment time after the insertion of the optical recording medium into the apparatus" (Uhde paragraph [0007]).

Regarding claim 12, Uhde disclose an optical disc wherein the information regarding the optical disc is at least one of tracking polarity information and reflectivity information (see paragraph [0022] where the BCA information is described as "tracking regulation" including "track gain" and "track offset").

Regarding claim 22, Otomo discloses an optical disc, comprising: a first recording layer formed on the optical disc (Figure 1 element 17); a second recording layer formed on the optical disc (Figure 1 element 17); wherein the first recording layer

and a second recording layer each comprise a clamping area, a lead-in area, and a lead-out area (see paragraph [0081] and Figure 1); wherein the clamping area is an area that is pressurized to clamp the optical disc (see paragraph [0079]) and a data area recording user data between the lead-in area and the lead-out area.(see Figure 1 element 28). Otomo does not teach a burst cutting area (BCA) in which tracking polarity information and/or reflectivity information is recorded. Uhde on the other hand teaches a BCA in which tracking polarity information and/or reflectivity information is recorded (see paragraph [0022] where the BCA information is described as "tracking regulation" including "track gain" and "track offset").

Regarding claim 25, Otomo teaches the optical disc wherein the clamping area is circular band shaped and formed in an inner portion of the optical disc (see Figure 1 element 24).

Regarding claim 27, Uhde discloses the optical disc wherein the BCA B is formed on the first recording layer (see paragraph [0009]).

Regarding claim 28, Uhde discloses the optical disc wherein the BCA B is formed on the second recording layer (see paragraph [0009]).

13. Claims 13, 14, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otomo et al. (US PGPub 2001/0008578 A1) and Uhde et al. (US PGPub 2002/0003757 A1) as applied to claims 11, 12, and 22 above, and further in view of Nishiuchi et al. (US Patent 6,894,962 B1).

Regarding claim 13, Otomo and Uhde disclose an optical disc wherein tracking polarity and reflectivity information are recorded (see the BCA area of Uhde paragraph [0022]) but fail to teach that the tracking polarity information and the reflectivity information are recorded with a pattern of crystalline or non-crystalline marks. Nishiuchi on the other hand discloses an optical disc wherein the tracking polarity information and the reflectivity information are recorded with a pattern of crystalline or non-crystalline marks (see the BCA area in column 11 lines 48-53).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical disc of Otomo and Uhde to include a BCA area recorded with crystalline marks as disclosed by Nishiuchi. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to allow information to be recorded "without damaging the information layer" (Nishiuchi column 11 lines 54 and 55).

Regarding claim 14, Otomo, Uhde, and Nishiuchi teach an optical disc that records tracking polarity information in the BCA however fail to teach that of the tracking polarity information begins at leading bytes in the BCA. Examiner takes official notice that it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to locate the tracking polarity information in any location of the BCA including in the leading. One of ordinary skill in the art at the time the invention was made would have been motivated to do so because locating the tracking polarity information in any location in the BCA of the optical disc would produce identical performance in terms of storing and reading back data.

Regarding claim 23, Otomo and Uhde teach an optical disc wherein tracking polarity and reflectivity information are recorded (see the BCA area Uhde paragraph [0022]) but fail to teach that the first recording layer is formed of a phase change material and the tracking polarity information and the reflectivity information are recorded with a pattern of crystalline or non-crystalline marks

Nishiuchi however, teaches an optical disc wherein the first recording layer is formed of a phase change material (PCM) and the tracking polarity information and/or the reflectivity information is recorded with a pattern of crystalline and/or non-crystalline marks (see the information layers and BCA area in column 11 lines 44-53).

Regarding claim 24, Otomo and Uhde teach an optical disc wherein tracking polarity and reflectivity information are recorded (see the BCA area Uhde paragraph [0022]) but fail to teach that the second recording layer is formed of a phase change material and the tracking polarity information and the reflectivity information are recorded with a pattern of crystalline or non-crystalline marks.

Nishiuchi however, teaches an optical disc wherein the second recording layer is formed of a phase change material (PCM) and the tracking polarity information and/or the reflectivity information is recorded with a pattern of crystalline and/or non-crystalline marks (see the information layers and BCA area in column 11 lines 44-53).

14. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otomo et al. (US PGPub 2001/0008578 A1), Uhde et al. (US PGPub 2002/0003757

A1), and Nishiuchi et al. (US Patent 6,894,962 B1) as applied to claim 14 above, and further in view of Kobayashi et al. (US Patent Number 6,819,643 B2).

Regarding claim 15, Otomo, Uhde, and Nishiuchi disclose an optical disc wherein the tracking polarity information is in a BCA but fail to teach that the tracking polarity information is repeatedly recorded. Kobayshi, however, discloses an optical disc (Figure 3) wherein the information is repeatedly recorded (column 4 lines 10-17).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enhance the optical disc that contains the tracking polarity information of Otomo, Uhde, and Nishiuchi by repeatedly recording the information as taught by Kobayshi. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings in order to maintain reliable tracking polarity information.

15. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Otomo et al. (US PGPub 2001/0008578 A1) and Uhde et al. (US PGPub 2002/0003757 A1) as applied to claim 22 above, and further in view of Kusumoto et al. (US Patent Number 6,295,262 B1).

Regarding claim 26, Otomo and Uhde disclose an optical disc with BCA (see the BCA area Uhde paragraph [0022]) but fail to teach that the serial number and manufacturing date corresponding to the optical disc are recorded in the BCA . Kusumoto on the other hand, teaches an optical disc wherein a serial number (column 1 lines 34-38) and manufacturing date (see the discussion of bar codes containing "any

arbitrary information in column 1 lines 49-51) corresponding to the optical disc are recorded in the BCA.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the serial number and manufacturing date, as taught by Kusumoto into the BCA area of the optical disc taught by Otomo and Uhde. One of ordinary skill in the art at the time the invention was made would have been motivated to combine the teachings because "the added information can be read easily" and it is possible to implement the information "securely and efficiently" (see Kusumoto column 1 lines 52-57).

Allowable Subject Matter

16. Claims 6-8, 10, 16, and 29 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 6 7 and 8, none of the references of record, alone or in combination suggest or fairly teach the optical disc including all of the limitations of claim 4 wherein **the first two bits of the leading bytes of the tracking polarity information comprise identifiers of the respective tracking polarity information that is repeatedly recorded several times**, and the other six bits comprise remaining information of the tracking polarity information.

Regarding claims 10, 16, and 29, none of the references of record, alone or in combination, suggest or fairly teach the information recording and reproducing

apparatus including all of the limitations of claims 1, 11, and 22 respectively wherein first two bits b1b0 of the tracking polarity information are identifiers of the information that are repeatedly recorded, **where if the first two bits b1b0 are 00, the information indicates that first tracking polarity information is recorded in the BCA, if the first two bits b1b0 are 01, the information indicates that second tracking polarity information is recorded in the BCA, if the first two bits b1b0 are 10, the information indicates that third tracking polarity information is recorded in the BCA, or if the first two bits b1b0 are 11, the information indicates that fourth tracking polarity information is recorded in the BCA.**

Citation of Relevant Prior Art

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is Tomita et al. (US PGPub 2003/0202436 A1). Tomita discloses an optical disc with tracking polarity information stored in the BCA (paragraph [0074]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaTanya Bibbins whose telephone number is (571) 270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LaTanya Bibbins
Patent Examiner

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER